

CLAIMS

1 1. Apparatus for spraying fluid onto an object in a treatment
2 location having a floor and comprising:
3 a support structure overhead the location
4 a spray nozzle carrier arm of essentially inverted L-shape having a
5 horizontal spray portion extending from an inboard end generally over the center
6 line of the location to a second end at the periphery of the location; said arm
7 further having a vertical spray portion essentially continuous with the horizontal
8 portion and extending from the second end thereof downwardly toward the floor;
9 spray nozzles carried by said arm;
10 a powered pivot structure connecting said arm to said support
11 structure to pivot said arm about a vertical axis passing substantially through the
12 inboard end of the first portion whereby the vertical portion of the arm may be
13 caused to circumscribe at least a portion of the area ; and
14 means for supplying fluid to the nozzles under pressure.

1 2. Apparatus as defined in claim 1 wherein said support
2 structure defines a longitudinal path of travel and said apparatus further
3 comprises:
4 a carriage structure mounted for longitudinal movement over and
5 relative to the treatment location;
6 a reversible carriage drive system; and

23

7 said powered pivot structure being mounted on said carriage.

1 3. Apparatus as defined in claim 2 further including a shuttle
2 structure mounted on said carriage and including a shuttle drive system for
3 selectively causing movement of said shuttle and pivot structure laterally of said
4 support structure and carriage.

4 4. Apparatus as defined in claim 3 further comprising a
programmable controller having outputs connected to the pivot structure, said
carriage drive and said shuttle drive.

5 5. Apparatus as defined in claim 4 wherein said programmable
controller includes means for programmably controlling the speed of movement
of said carriage and shuttle drives.

1 6. Apparatus as defined in claim 5 wherein said programmable
2 controller comprises a variable frequency generator.

1 7. Apparatus as defined in claim 5 wherein said programmable
2 controller comprises a key pad input.

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1 8. Apparatus as defined in claim 1 further including a
2 resettable, breakaway joint disposed between and interconnecting said first and
3 second carrier arm portions for permitting nondestructive relative movement
4 between said portions when said second arm is subjected to a force.

1 9. Apparatus as defined in claim 1 wherein said means for
2 supplying said nozzles with fluid comprises a fluid source and has multiple
3 pressure settings.

1 10. Apparatus as defined in claim 1 wherein said support
2 structure comprises a pair of spaced, parallel hollow beams suspended over the
3 washing area, at least one cross beam extending between and supported by
4 said pair of beams;

5 said apparatus further comprising a carriage mounted for powered,
6 reversible travel on said beams, a shuttle structure mounted for powered,
7 reversible movement on said carriage cross beam and laterally of said pair of
8 beams.

1 11. Apparatus as defined in claim 10 further comprising means
2 for adjusting the lateral spacing between said pair of parallel beams.

25

1 12. Apparatus as defined in claim 10 further comprising means
2 for supplying heated liquid to the interior spaces of the beams.

1 13. A pressure washer for an object in a washing area
2 comprising:
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4 a support structure over said area;
5 a pair of spray nozzle carrier arms each being of essentially
6 inverted L-shaped configuration and having a first portion extending from a
7 center point toward the periphery of the area and a second contiguous vertical
8 portion disposed adjacent to the area;
9 spray nozzles carried by each of said carrier arms;
10 a pivot structure connecting said carrier arms to said support
11 structure at said center point to reversely pivot said carrier arms whereby the
12 vertical portions of said carrier arms may be caused to follow reversely similar,
13 essentially mirror image paths which together circumscribe the area; and
 means for supplying fluid to the nozzles under pressure.

1 14. Apparatus as defined in claim 13 wherein said support
2 structure defines the longitudinal path of travel;
3 said apparatus further comprising a carriage structure mounted for
4 longitudinal movement over and relative to the washing area, said pivot structure
5 be mounted on said carriage for movement therewith.

26

1 15. Apparatus as defined in claim 14 further including a shuttle
2 structure mounted on said carriage structure for bidirectional lateral movement
3 relative to said arms.

1 16. Apparatus as defined in claim 13 further including a
2 resettable breakaway joint disposed between interconnecting each of said first
3 and second carrier portions for permitting nondestructive controlled relative
4 movement between said portions.

1 17. Apparatus as defined in claim 13 further comprising a
2 programmable controller for controlling the movement of said support structure
3 relative to said washing area.

1 18. Apparatus as defined in claim 17 wherein said
2 programmable controller comprises means for controlling the speed of
3 movement of said carriage.

1 19. Apparatus as defined in claim 18 wherein said
2 programmable controller comprises a display.

29

1 20. Apparatus as defined in claim 19 wherein said
2 programmable controller comprises a key pad.

1 21. Apparatus as defined in claim 1 wherein said means for
2 supplying said nozzles with washing fluid comprises at least two fluid sources.

1 22. A pressure washer for an object in a washing area
2 comprising:

3 a support structure over said area;
4 a pair of spray nozzle carrier arms each being of essentially
5 inverted L-shaped configuration and having a first portion extending from a
6 center point toward the periphery of the area and a second contiguous vertical
7 portion disposed adjacent to the area;

8 spray nozzles carried by each of said carrier arms;
9 a pivot structure connecting said carrier arms to said support
10 structure at said center point to reversely pivot said carrier arms whereby the
11 vertical portions of said carrier arms may be caused to follow reversely similar,
12 essentially mirror image paths which together circumscribe the area; and
13 means for supplying fluid to the nozzles under pressure wherein
14 said means for supplying said nozzles with washing fluid comprises at least two
15 fluid sources.

1 23. Apparatus as defined in claim 22 wherein said support
2 structure comprises a pair of spaced parallel beams dispersed over the washing
3 area, at least one cross beam extending between and supported by said pair of
4 longitudinal beams, and a shuttle structure mounted on the support for powered
5 programmably coordinated movement along said beams.

1 24. Apparatus as defined in claim 22 further including means
2 for determining the location of a vehicle in said area.

1 25. A method of pressure washing a vehicle which is disposed
2 in a washing area comprising the steps of:

3 providing a spray nozzle carrier arm of essentially inverted L-shape
4 having a first horizontal portion which is disposed over the area and a
5 contiguous, second vertical portion which is disposed adjacent the periphery of
6 the area;

7 causing said carrier arm to circumscribe at least part of the area
8 and to pivot about an end of the arm which is generally over the center of the
9 area; and

10 supplying washing fluid to the nozzles under pressure.

29

1 26. A method as defined in claim 25 wherein the step of
2 circumscribing is carried out so as to maintain a substantially constant spacing
3 between the vertical arm portion and a vehicle in the area.

1 27. A method of washing a vehicle having top, front, rear and
2 side surfaces while standing in a washing area comprising the steps of:

3 providing a pair of spray nozzle carriers each of essentially
4 inverted L-shape and each having first horizontal portions which overlie the
5 washing area and second vertical portions which are adjacent the washing area;

6 causing said carriers to pivot from the inboard distal ends of said
7 horizontal portions in a reversely similar fashion so as to fully circumscribe said
8 area and said vehicle while maintaining a substantially constant spacing from
9 the side surfaces of said vehicle; and

10 supplying said nozzle carriers with washing fluid under pressure.

1 28. A method of washing a vehicle in a washing area
2 comprising the steps of:

3 providing a pair of reversibly similar spray nozzle carriers of
4 inverted L-shape having a substantially common pivot center over the area;

5 moving the carriers through a butterfly pattern while moving the
6 pivot center along and over the centerline of the vehicle while simultaneously
7 supplying both carriers with fluid; and

30

8 moving each carrier sequentially through a butterfly pattern at a
9 predetermined optimal distance from the vehicle while supplying each carrier
10 independently with fluid.

31